

Claims

Sub 117
 1. A device for ^{crushing} ^{inaccurate} a hydrous polymer gel, comprising two rolls (11,12) located ^{axially parallel} ^{for cut line} and rotating in opposite directions having between them a nip (13) for the passage of the polymer gel (10), characterized in that one roll is formed as a cutting roll (11) which is provided with at least one axially extending cross cutting element (15) having a cutting edge (17) and with a radially extending longitudinal cutting element (14) provided with a cutting edge (18) running around it, and that the other roll is formed as a back-up roll (12).

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 2. A device for ^{crushing} ^{inaccurate} a hydrous polymer gel, comprising two rolls (12,19) located axially parallel and rotating in opposite directions between which a nip (13) for the passage of the polymer gel (10) is formed, characterized in that one roll is formed as a cross cutting roller (19) which is provided with at least one axially extending cross cutting element (15) provided with a cutting edge (17), that the other roll is formed as a back-up roll (12), and that a longitudinal cutting roller (20) with at least one radially extending slitting element (14) provided with a cutting edge (18) running around it is arranged ahead of the cross cutting roller (19).

a
all
 3. The device according to ^{claim 1 or 2} ~~at least one of the preceding claims~~ characterized in that the width of the roll gap (13) approximates the height of the cross cutting elements (15) ^{and/or} ^{radial} longitudinal cutting elements (14).

a *all*
 4. The device according to ^{claim 1 or 2} ~~at least one of the preceding claims~~ characterized in that the width of the roll gap (13) is variable.

a *all*
 5. The device according to ^{claim 1 or 2} ~~at least one of the preceding claims~~ characterized in that ^{the} longitudinal cutter (14) is ^{formed} such

that its circumferential rate is higher than the conveying rate of the polymer gel (10).

Claim 1 or 2

6. The device according to ~~at least one of the preceding claims~~ characterized in that the cross cutters (15) are formed of a flat steel polished on one side.

Claim 1 or 2

7. The device according to ~~at least one of the preceding claims~~ characterized in that the cross section of the cross cutting elements (15) is plane or has the form of a sickle.

Claim 1 or 2

8. The device according to ~~at least one of the preceding claims~~ characterized in that the cross cutters (15) are arranged in parallel (or spindle-like) to the longitudinal axis of the cutting roll (11) or (cross cutting roll) (19).

Claim 1 or 2

9. The device according to ~~at least one of the preceding claims~~ characterized in that the back-up roll (12) conveys the polymer gel (10) and presses it against the cross cutters (15) and/or longitudinal cutters (14) during cutting.

Claim 1 or 2

10. The device according to ~~at least one of the preceding claims~~ characterized in that the back-up roll (12) is coated with a plastic material, in particular with polyethylene, polypropylene, Teflon or the like.

Claim 1 or 2

11. The device according to ~~at least one of the preceding claims~~ characterized in that the back-up roll (12) has a surface provided with (depressions) which can receive the cutting edges (17, 18) of the cross cutting elements (15) (and/or longitudinal cutting elements (14)).

12. A process for coarse grinding hydrous polymer gels characterized in that the hydrous polymer gel (10) is coarsely ground into

polymer gel pieces of a given size immediately after polymerization without any auxiliaries or additional technical measures, using a device according to at least one of the preceding claims.

13. The process according to claim 12 characterized in that coarse grinding is effected in a continuous flow of material.

add B1

add C1

C3 add D1

add I27